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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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OBLON SPIVAK MCCLELLAND
MAIER & NEUSTADT
1755 JEFFERSON DAVIS HIGHWAY
FOURTH FLOOR
ARLINGTON VA 22202

EXAMINER

DOVE, T

ART UNIT

PAPER NUMBER

1745

DATE MAILED:

12/15/00

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

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Office Action Summary

Application No.
09/381,295

Applicant(s)
Aihara et al.

Examiner
Tracy Dove

Group Art Unit
1745



☒ Responsive to communication(s) filed on 22 Sep 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-13 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☒ Claim(s) 8 is/are allowed.

☒ Claim(s) 1-7 and 9-13 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☒ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 3

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The disclosure is objected to because of the following informalities:

page 10, line 2 “adherend” should be “adhered”;

page 16, line 22 “N-methlpyrrolidone” should be “N-methylpyrrolidone”.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

Claims 1-7, 9 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by

Takeuchi et al., US 6,096,456 “Takeuchi”.

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~~Takeuchi discloses a film for a separator. The film for separator may contain a resin such~~
as polyvinylidene fluoride (adhesive resin) and the solvent may be N-methylpyrrolidone. To increase the strength of the film and the amount of electrolytic solution, alumina particles (non-conductive filler) are added. Alumina particles are particularly preferred in view of stability and ease of compounding. The ion-conductive separator is combined with a positive electrode and a negative electrode, each compounded with a solid polymer electrolyte, thereby obtaining a battery such as a solid Li secondary battery free of leakage of the solution and capable of free shaping. The size of the alumina is 0.01 to 100 μm , more preferably 0.01 to 30 μm . The polymer material can even in the holes within the electrodes or the separator. See col. 14, lin 5-28; col. 16, lin 1; col.17, lin 62-col. 18, lin 30; col. 18, lin 66-67; and col. 25, lin 27-29.

Thus the claims are anticipated.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

~~Claims 1-7 and 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over~~

Hamano et al., US 6,124,061 "Hamano" in view of Takeuchi et al., US 6,096,456 "Takeuchi".

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~~Hamano teaches a lithium-ion secondary battery having excellent charge and discharge~~
characteristics in which electric connection between electrodes can be maintained without requiring a strong armor metal case. See abstract. A porous resin adhesive layer bonds the positive active material layer and the negative active material layer to the separator. The resin is preferably polyvinylidene fluoride in N-methylpyrrolidone. See col. 3, lin 45-63.

Hamano does not explicitly teach adding a filler to the adhesive resin layer.

However, Takeuchi teaches adding fillers such as alumina to polyvinylidene fluoride resins to form a ion-conducting porous support is known in the art. See discussion of Takeuchi above.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because adding fillers to polyvinylidene fluoride to create a porous layer is known in the art. One of skill would have modified Hamano because adding fillers adds porosity to the film which could then help hold solution in the cavities of the filler material. See Takeuchi col. 16, lin 61-col. 17, lin 4.

Allowable Subject Matter

Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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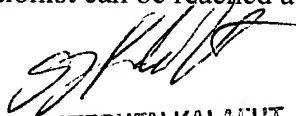
~~The claim is directed toward an adhesive layer having at least two layers. One layer~~
contains an electrically conductive filler.

The prior art does not teach an adhesive layer have a layer containing an electrically conductive filler.

Note that the adhesive layer of the invention does not include any part of the electrode body, including the active material layer.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is (703) 308-8821. The Examiner may normally be reached *Monday-Thursday from 8:00 AM - 6:30 PM*. My acting supervisors are Carol Chaney, who can be reached at (703) 305-3777, and Steve Kalafut, who can be reached at (703) 308-0433. The Art Unit receptionist can be reached at (703) 308-0661 and the official fax number is (703) 305-3599.


STEPHEN KALAFUT
PRIMARY EXAMINER
GROUP 1700

December 5, 2000